

Serial No.: 09/656,694

In reply to Office Action mailed: December 23, 2004

Page 9 of 13

REMARKS

This is in response to the Office Action mailed on May 27, 2005 where claims 1, 4-11, 13-16, 19-32, and 35-36 are pending in the application. Claims 19-32 have been withdrawn in a previous response. With this amendment, claims 1, 7 and 9 are amended. The remaining claims are unchanged in the application.

Claims 7 and 9-10 are rejected under 35 U.S.C. 112, second paragraph because there was no antecedent basis for "first material." With this amendment, claims 7 and 9 are amended so that "first material" is replaced with "second material," which has antecedent basis in claim 14 from which claims 7 and 9-10 directly or indirectly depend. Applicants respectfully request removal of the rejection under 35 U.S.C. 112.

Independent claim 1, along with some of its dependent claims 4-5, 8, 13, and 35-36 were rejected under 35 U.S.C. 102(b) as being anticipated by Strott. Applicants have amended the independent claim to include features not shown in Strott or suggested by the prior art. Specifically, the claim has been amended to include the feature of a "sensor body having a front surface and a back surface, wherein the front surface is adapted to be disposed more proximate the fluid than the back surface . . . [and] sensing element coupled to the front surface." In addition, the claim has been amended to include the feature of "the sensor die includ[ing] a top profile proximate the front surface . . . that is substantially planarized." Support for this amendment can be found throughout the specification and particularly at page 7, lines 2-5.

Independent claim 1 is patentably distinguishable from any reasonable interpretation of Strott. For example, if element 2 of Strott is considered to make up all or part of the sensor body (such as in combination with element 4), then Strott does not show a "sensor body [having] a plurality of openings extending from the front surface to the back surface . . . and a connection material filling the plurality of openings . . ." as set forth in the claim.

Serial No.: 09/656,694

In reply to Office Action mailed: December 23, 2004

Page 10 of 13

Also, if element 4 is considered to be the sensor body, then Strott does not show "sensing elements coupled to the front surface . . . where the front surface is adapted to be disposed more proximate the fluid than the back surface." In Strott, the front surface of element 4 is the upper most surface in Figure 2 because when in use, that surface contacts the fluid and is "more proximate the fluid" than the back surface of element 4 (i.e., the surface touching element 2). Consequently, Strott teaches the sensing elements coupled to the back surface of the sensor body, contrary to the claim. In addition, Strott does not teach a sensor die having "a top profile proximate the front surface . . . that is substantially planarized" because of the discontinuities created with elements 1 and 9 in the sensor die profile.

Accordingly, Applicants respectfully request the rejection based on 35 U.S.C. 102(b) be withdrawn.

Independent claim 1, along with its dependent claims, were also rejected under 35 U.S.C. 103(a) based on various combinations of references. Applicants respectfully submit that the amended claims are patentably distinguishable from the combination of references. Specifically, Independent claim 1 has been amended to include the features of "sensing elements coupled to the front surface and encapsulated in a surround material around and between the sensing elements" and "a top profile . . . that is substantially planarized to reduce resistance to fluid flow." Because at least these amended features are missing from each of the references separately, they would be missing from any proposed combination of the references.

Claims 1, 4-5, and 35-36 were "rejected under 35 U.S.C. 103(a) as being unpatentable over Genova et al. in view of Nagai." Applicants believe the rejection was intended to include newly cited Nukui rather than Genova because the reason for the rejection apparently refers to the reference numerals of Nukui Figure 1 rather than the drawings of Genova. In addition, the reason for the rejection refers to the IBMTDB, which is

Serial No.: 09/656,694

In reply to Office Action mailed: December 23, 2004

Page 11 of 13

not part of the reference in the combination. Applicants respectfully request clarification of the rejection if it is not overcome with this amendment.

Nevertheless, none of the set of references including Genova, Nagai, Nukui, and IBMTDB show a sensor body or sensor die including the amended features of independent claim 1. Specifically, Genova, Nagai, and IBMTDB do not teach sensor dies having substantially planarized top profiles proximate the front surface. Genova teaches a substantial protrusion 12 from its die profile. Nagai also teaches a depression proximate element 2 in its die profile. Accordingly, the proposed combination of Genova and Nagai does not show or suggest the features of the amended claims. Further, IBMTDB does not show a substantially planar top profile proximate the front surface because this corresponds to the flow channel extending through the center of the article.

Still further, while Nukui teaches a generally planar "protective cover 5 for preventing an operator from touching surfaces of the detector elements 4 when he mounts the detector," the cover does not encapsulate the elements in a surround material around and between the sensing elements as set forth in the claim. Additionally, the die profile is not substantially planarized with the cover 5 as indicated in Figure 3B, which is "a cross-sectional view of the thermal type flow rate detector." Furthermore, there is no suggestion in the prior art that the die profiles be planarized "to reduce resistance to fluid flow" as set forth in the claim because the detectors of Nukui and others of the prior art are disposed directly in the path of the flow and disrupt the fluid flow anyway.

Because the amended features are missing from each of these references separately, they would be missing from any proposed combination of the references. Applicants respectfully request removal of this rejection.

Claims 1, 4-11, 13-16 and 35-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over IBMTDB in view of Nagai or Genova, and Nukui. As discussed

Serial No.: 09/656,694

In reply to Office Action mailed: December 23, 2004

Page 12 of 13

immediately above, these references do not show and the prior art does not suggest the features of the amended claims, and thus applicants respectfully request removal of this rejection.

Claims 1, 4-5, 8, 11 and 35-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai in view of IBMTDB, and either Nukui or Strott. All of these references are discussed above as missing the feature of a substantially planarized die profile, including Strott in connection with the rejection based on section 102. Accordingly, this feature would be missing from any proposed combination of the references. Applicants respectfully request removal of this rejection.

Claims 1, 4-11, 13-16, and 35-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ang in view of either Nagai or Genova, and either Nukui or Strott. Applicants have demonstrated above that the amended features of the claims related to the planarized die profile are missing from Nagai, Genova, Nukui and Strott. Ang is also missing these features. The figures in Ang clearly show a stepped, not planarized, profile. Accordingly, these features would be missing from any proposed combination of the references. Applicants respectfully request removal of this rejection.

Finally, claims 1, 4-11, 14-16 and 35-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over IBMTDB or Ang in view of Nagai or Genova, and further in view of Morimasa. Applicants have demonstrated above that the amended features of the claims related to the planarized die profile are missing from Ang, Nagai, and Genova. Morimasa also clearly does not have the claimed feature of a substantially planarized die profiles to reduce resistance to fluid flow because it teaches the use of a tortuous channel from the top surface to underneath the sensing element that disrupts fluid flow. Accordingly, the features of the amended claim would be missing from any proposed combination of the references. Applicants respectfully request removal of this rejection.

Serial No.: 09/656,694

In reply to Office Action mailed: December 23, 2004

Page 13 of 13

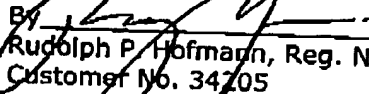
Based on the above, applicants respectfully request that the rejection based on 35 U.S.C. 103(a) be withdrawn.

Applicant submit that the amended claims now overcome the rejection under section 112 and are patentably distinguishable from the prior art for at least the reasons set forth above. Favorable action and allowance are requested. Applicants respectfully submit the amended claims are patentably distinguishable from the prior art of record. Favorable action and allowance are requested.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (612) 607-7340.

If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees including fees for any extension of time, to Deposit Account No. 50-1901 (Reference 9028-322).

Respectfully submitted

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